



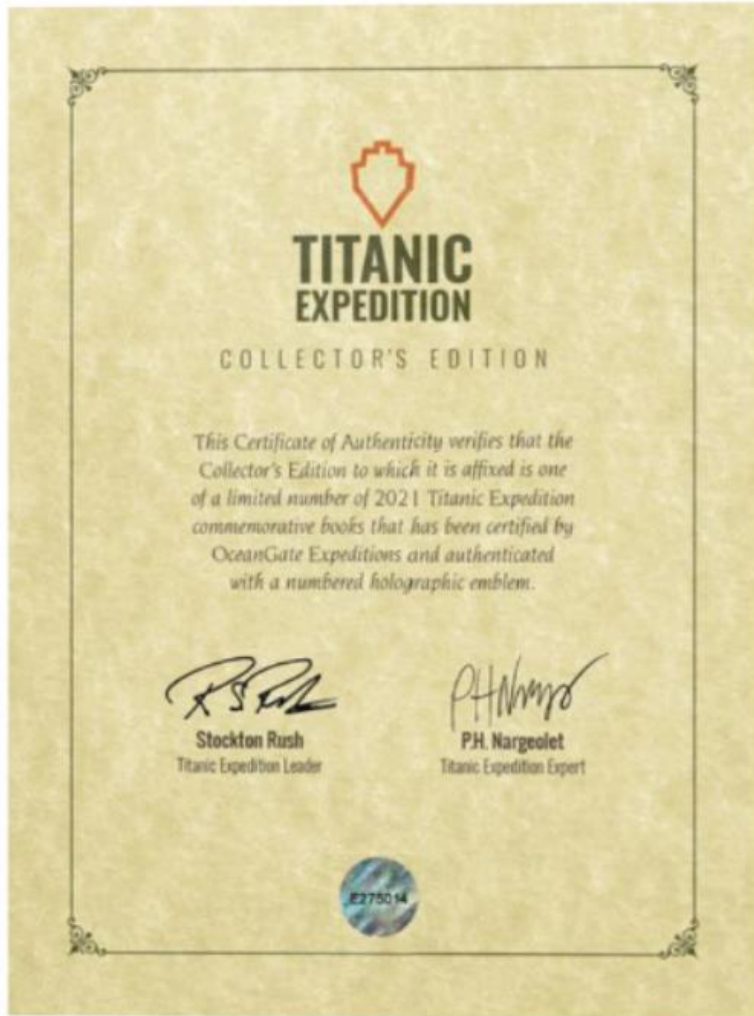
TITANIC EXPEDITION 2021

A CREWED SUBMERSIBLE
EXPEDITION TO EXPLORE THE
WORLD'S MOST FAMOUS
SHIPWRECK

COLLECTOR'S EDITION



*In memory of the souls who perished the night of
April 15, 1912.*



SUMMER 2021

A CREWED SUBMERSIBLE EXPEDITION TO EXPLORE
THE WORLD'S MOST FAMOUS SHIPWRECK



TABLE OF CONTENTS 2021 TITANIC EXPEDITION

Introduction	4 - 9
Prep & Transit	10 - 19
Dive Operations	20 - 43
The Dives	44 - 123
Bonus Pages: 2022 Expedition	124 - 133
Topside Activities	134 - 147
Special Thanks and Crew	148 - 150

2021 Titanic Expedition ©2021 OceanGate Expeditions

Argus Expeditions, Ltd.
Nassau, Bahamas
dba OceanGate Expeditions
Everett, Washington
OceanGateExpeditions.com
+1 425-595-5017

Notice of Rights

All rights reserved. No part of this book may be reproduced or transmitted in any form by means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. For information on getting permission for reprints and excerpts, please email us at: contact@oceangateexpeditions.com

Book design by joelperrydesign.com



Art Prints

A selection of images in this book are available for purchase as large format prints suitable for framing and display.

Please see OceanGateExpeditions.com for details and additional Titanic themed memorabilia

*This book is dedicated to our families, friends, and supporters
who believed in us and had faith that success would come
to those who persevere.*



INTRODUCTION

2021 Titanic Expedition

OceanGate Expeditions is opening a new era of human exploration of the deep ocean with the deployment of *Titan*, the world's only human-occupied carbon fiber and titanium submersible.

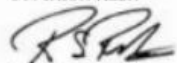
Our multi-year survey of the *Titanic* wreck site offers a new group of explorers and researchers the opportunity to join our expeditions to explore the *Titanic* as well as future expeditions to investigate the 95% of Earth's ocean that remains unexplored.

The 2021 *Titanic* Expedition was the result of many years of teamwork, innovation, and persistence. The successful deployment of *Titan* and the inaugural expedition in 2021 marked the end of a multi-year development phase that drew on the expertise of hundreds of engineers, technicians, and deep-sea explorers. We can now look ahead to exploring fascinating dive sites around the world that can help us better understand human history, deep sea biology, seafloor geology, and a nearly infinite list of other topics.

In the following pages, we have curated the best images from our inaugural *Titanic* Expedition to inspire further innovation and exploration of the deep and to share new images of the shipwreck with the dreamers and explorers who help make discovery possible.

Both innovation and exploration require a team effort, and we sincerely appreciate the contributions of our crew members, mission specialists, industry partners, and investors.

Stockton Rush



Titanic Expedition Leader



After years of fruitless searching, the wreck of the RMS *Titanic* was finally discovered in 1985.

Since then, a handful of expeditions have explored the wreck – most using remotely operated vehicles. A few expeditions deployed crewed submersibles. Most notable of these is the 1986 expedition led by Robert Ballard who conducted the first human occupied submersible dives to the wreck in *Alvin* (USA), the 1995 expedition led by James Cameron who dove in the *MIR* (Russia) subs to capture images for the iconic film “*Titanic*” released in 1997, and the five expeditions from 1987 to 1998 by PH Nargeolet in *Nautilus* (France) as part of salvage operations.

What these expeditions have in common is that they each confirmed that the famous ship is deteriorating. Some say rapidly. Some say not. What is undisputed is that *Titanic* is being overwhelmed by the relentless spread of rusticles. Rusticles are a byproduct a biochemical process that is eating the manganese, iron, and sulfur out of the steel and weakening the wreck. As we



plan to revisit and document the same features of the wreck each year, we will generate good data to assess the rate of decay.

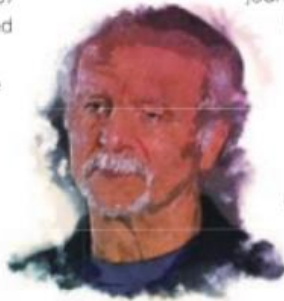
It is important to our team that we acknowledge the accomplishments of previous *Titanic* expeditions and explorers. We tip our hats to Jean-Louis Michel, Robert Ballard, Anatoly Sagalevich, and the rich legacy of human exploration by the crews of *Nautilus*, *Alvin* and *MIRs*. Their accomplishments inspire us to continue to innovate and explore.

Our direct link to this rich history of submersible dives is through a select group of veteran *Titanic*

explorers who joined our 2021 expedition. PH Nargeolet, "Titanic's Greatest Explorer", is a veteran of 37 *Titanic* dives and nine *Titanic* expeditions. He was joined by fellow *Titanic* veterans, Rory Golden and David Concannon, who have been on seven *Titanic* expeditions combined dating back to the year 2000. All three were onboard to share their hard-earned knowledge and insights with the crew.

Our 2021 *Titanic* Expedition was just the first of a series of planned annual expeditions to the site. Our goal for this first year was to begin to document the condition of the wreck by collecting high-resolution photographic images which experts can analyze to accurately assess changes in the wreck and to identify artifacts that may be revealed as the wreck collapses.

The expedition roster included a total of 56 crew including OceanGate Expeditions staff, mission specialists,



PH Nargeolet

Titanic experts, scientists, submersible experts, dive veterans, physicians, journalists, and technicians. All were active participants and played key roles in the success of the expedition. On each mission there were 28 to 34 people aboard, including 26 ship's crew, with a breadth and depth of expedition and adventure experience.

When *Titanic* sank in 1912 the ship broke into two main sections and many objects and pieces of the hull were scattered across the seabed. Most of this debris is concentrated near the stern section and consists of thousands of objects from the interior of the ship, ranging from tons of coal that spilled out of the ruptured bunkers, to suitcases, clothes, corked wine bottles (many still intact despite the pressure), bathtubs, windows, washbasins, jugs, bowls, hand mirrors and numerous other personal effects.

It is important to note that we do not salvage or remove anything from

the wreck or debris field. In fact, *Titanic* is not equipped with a manipulator arm or grabber of any sort. Our goal is always to leave the wreck as we found it. The only thing we take is imagery which we share freely with scientists through the OceanGate Foundation, an independent non-profit foundation that supports research and innovation in deep sea exploration and study. Select images are made available to the public through books like this one, on social media, and online. We do leave sacrificial ballast – but only in the predetermined locations recommended by the U.S. Coast Guard. These sacrificial weights are steel cylinders that are benign for the environment and provide shelter for local wildlife before they decay.

"This is definitely one of the most unique and interesting things I have ever done. I've been to Everest, but this is more unique".

Aaron Newman
Mission Specialist



Expedition Goals

Each annual expedition is planned as a scientific and technological survey of the wreck to:

1. Document the shipwreck and debris field using the latest multi-beam sonar and photographic technology.
2. Supplement the work done on past scientific expeditions to capture data and images that are missing from the scientific record.
3. Record the condition of the wreck with 4K and 8K resolution photographs and video, and
4. Document the marine life inhabiting the wreck site to compare against data collected at the wreck on prior scientific expeditions as well as a nearby abyssal deep-sea reef that we first explored in 2022.

Given the massive scale of the wreck and the debris field, multiple missions performed over several years will be required to fully achieve these goals.

Each dive into history is conducted respectfully and in accordance with NOAA Guidelines for Research Exploration and Salvage of RMS *Titanic* and comply with

UNESCO guidelines for the preservation of underwater world heritage sites.

2021 Expedition

The 2021 *Titanic* Expedition began with three days of hard work at the dock as we loaded *Titan* and 40 tons of expedition gear on the ship, tested *Titan*'s launch and recovery platform, and integrated it into our operations using the newly built ship's stern ramp. After determining that everything was in working order our first mission departed in late June.

The expedition was scheduled as a series of five missions. At the end of each mission leg the expedition ship, *Horizon Arctic*, returned to St. John's to resupply and exchange crew.

Titanic is located about 595 kilometers (380 nautical miles) from the coast of Newfoundland, and so each mission started and ended with a 36-hour transit between St. John's and the dive site.

Once on site, a total of five dive days were available – three as primary dive days and two held in reserve to allow for weather delays.

Five people were selected for each dive team, which included the pilot, a content

"It was movie-like. It was sort of dramatic, playing out right in front of me and it was breathtaking. It was very emotional".

Derrell Parsons
Mission Specialist

expert, and three mission specialists. All members of the dive team played key operational or scientific roles during the approximately 10-hour long dive.

The teams conducted dives to the bow section, the stern section, and through portions of the massive debris field – with most of the bottom time spent exploring the bow section.

This book is a partial record of their efforts.

Since the tragic sinking, numerous other books, articles, and films have chronicled *Titanic*'s history, from construction, to tragic sinking and aftermath, to discovery and exploration. This book does not replicate this previous work but focuses solely on the 2021 *Titanic* Expedition.

We hope these photographs ignite your passion to explore the hidden worlds in the deep ocean.

Enjoy.



DIVE OPERATIONS

Submersible Launch and Recovery



An experienced crew of technicians and engineers work with trained mission specialists to service *Titan*, plan the dives, deploy the launch and recovery platform, manage communications, and conduct tracking to ensure safe and successful dives.

Dive operations require careful dive planning and detailed organization. The process begins with selection of the dive site, dive objectives, and dive team. The dive team works with the expedition leader, scientists, wreck experts and ship's crew to create the schedule, assign roles, assess risks, review weather forecasts, and establish contingencies.

Following a pre-dive brief, the dive team boards *Titan*, and the dome is bolted shut before the platform is deployed down the stern ramp. After confirming life support and communication systems are functional and then getting the go-ahead from the Mission Director, the crew aboard the support boat uses pneumatic controls to vent air from the platform to submerge it to a depth of about 20 feet. Once the platform is underwater, the sub can unlock itself, lift off, and perform the dive.

At the end of the dive, the pilot lands the sub on the platform, locks it into position, and the support boat crew activates controls to transfer air from the four horizontal, low-pressure tanks into the body of the platform which brings it to the surface where it is pulled back up the stern ramp.





"It's tougher to go to the bottom of the ocean than to the far side of the moon. We saw things that human eyes have never seen before."

Dr. Scott Parazynski
Mission Specialist and
5-time Space Shuttle astronaut



(Left)

36A Titan at surface preparing to land on the submerged platform as a diver photographs the action.

36B The platform is brought to the surface during the dive and remains under tow.

(Right)

37A A view from the platform as Titan lifts off the platform to begin a dive.

37B Crew and Mission Specialists aboard the FRC support vessel.



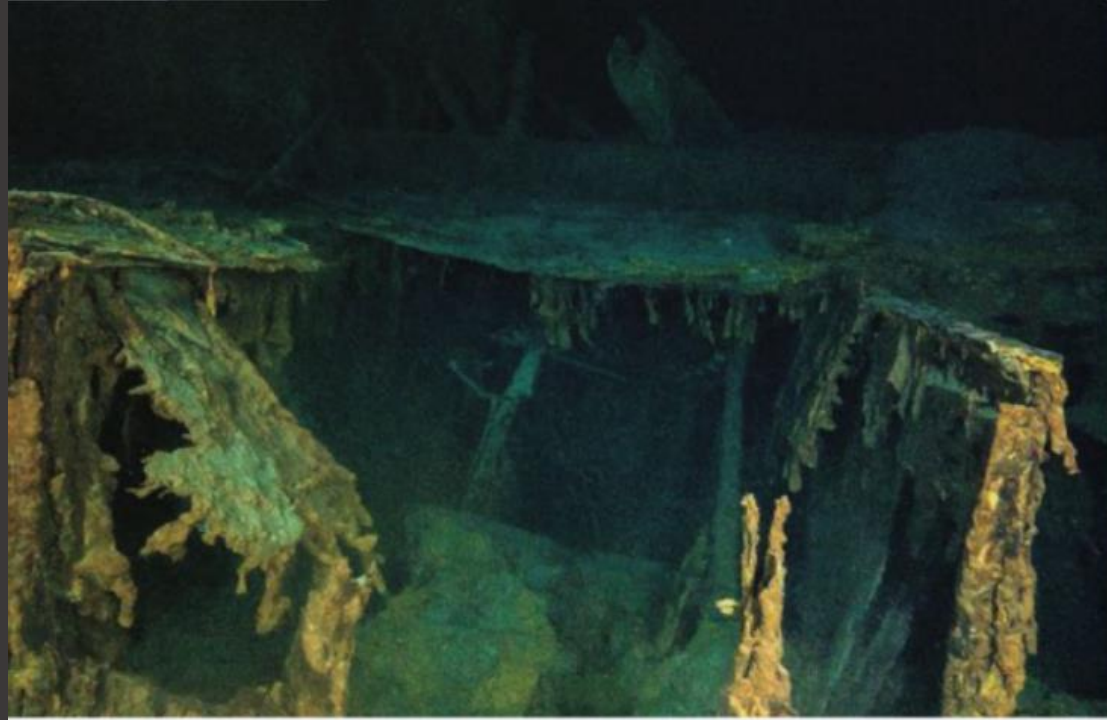


THE DIVES

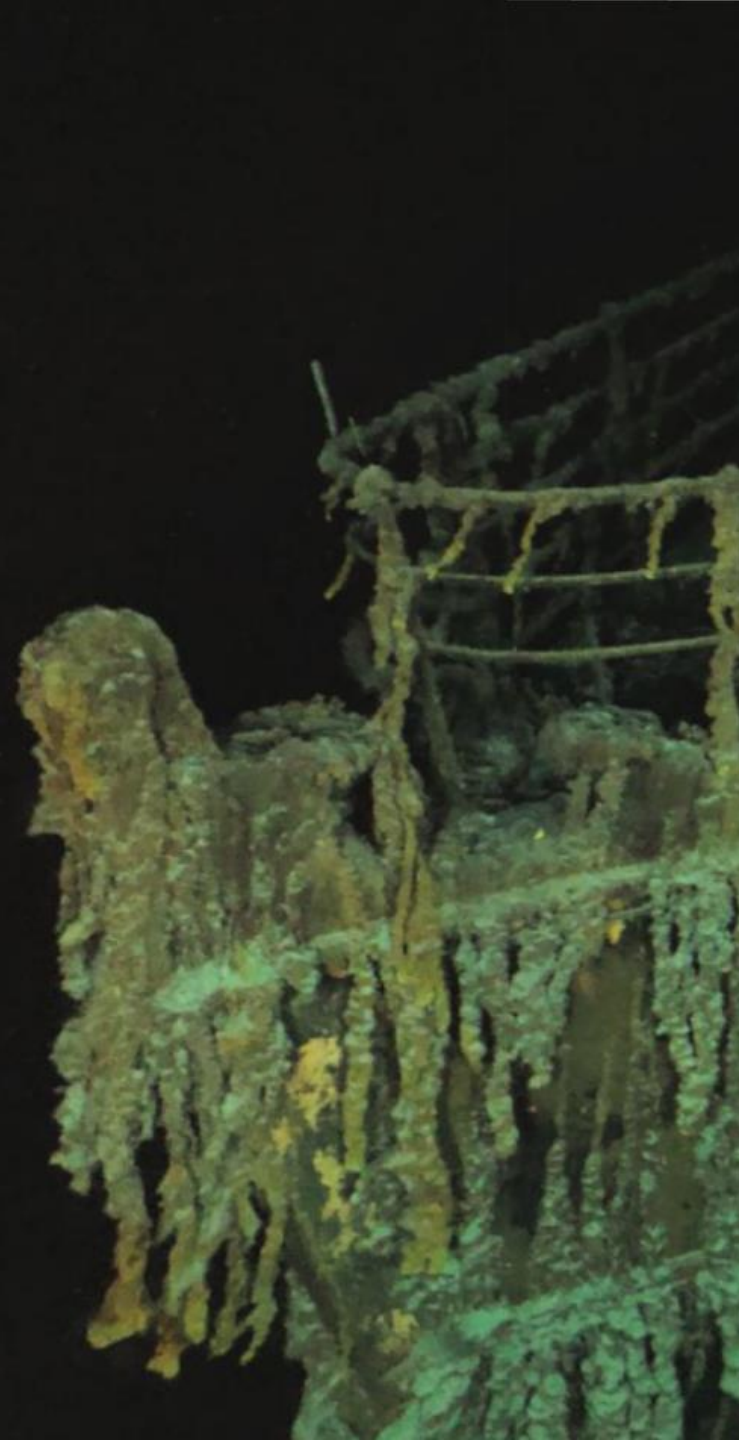
Exploring Titanic and Debris Field



The 2021 Titanic Expedition crew conducted the first-ever dives to the wreck site in a five-person submersible. The dive teams captured high-resolution and 4K video and images from multiple internal and external cameras to document portions of the bow section, debris field and stern section.



(Left)
46A A small portion of the massive debris field.
(Right)
47A A view into Captain Smith's quarters.
47B Titanic's bow with 15.5 ton center anchor.

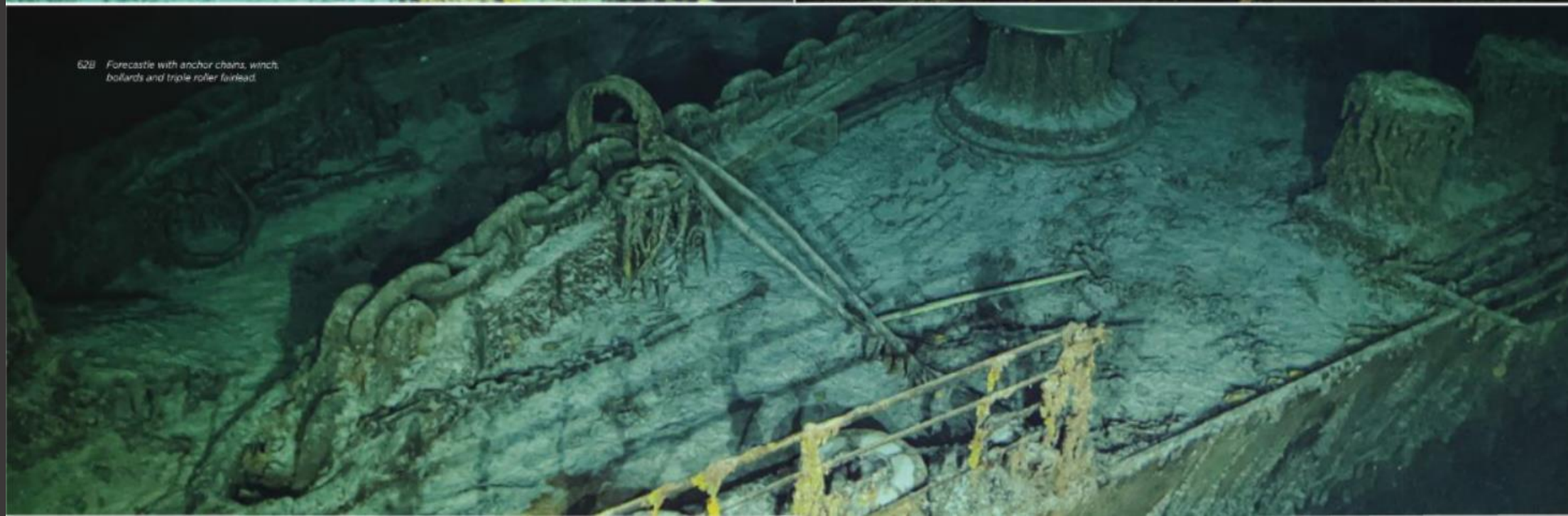




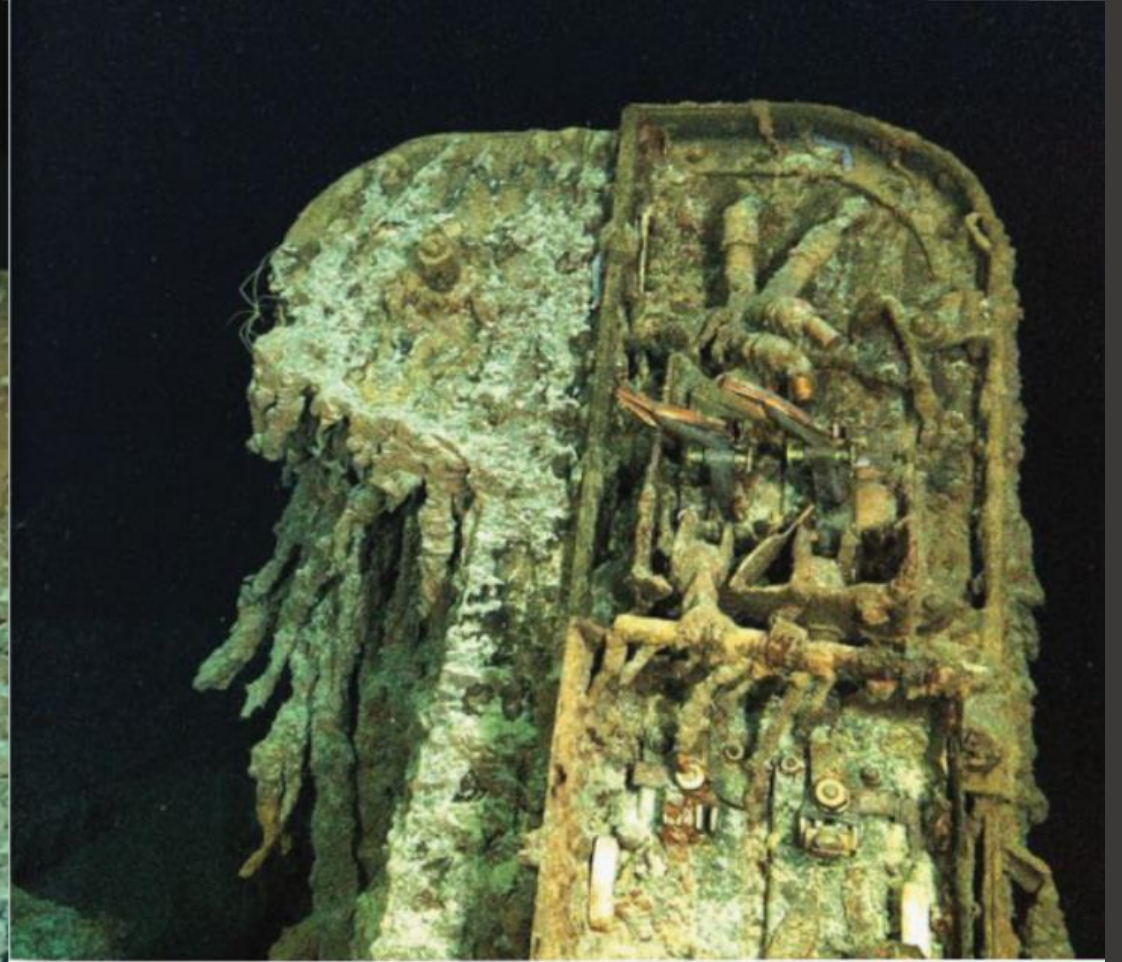
62A Port side forecastle with bollard, single roller fairlead and part of the breakwater



63A Forecastle with anchor chains, winch, bollards and triple roller fairlead (detail)



62B Forecastle with anchor chains, winch, bollards and triple roller fairlead



(Left)

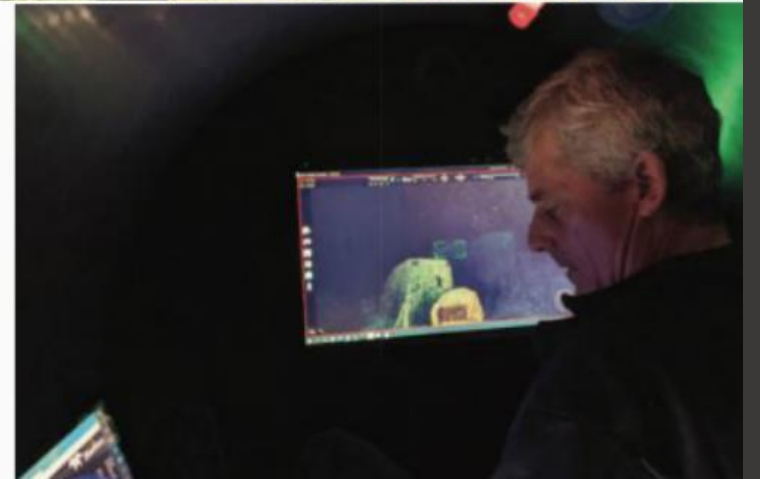
108A Close up view of vessel deterioration.

108B Mast (upper part) of electric crane base in stern section debris. Note the two control levers and brake pedal at the bottom.

(Right)

109A Close up of exposed electric crane panel showing fuses.

109B Stockton pilots Titan around the wreck.



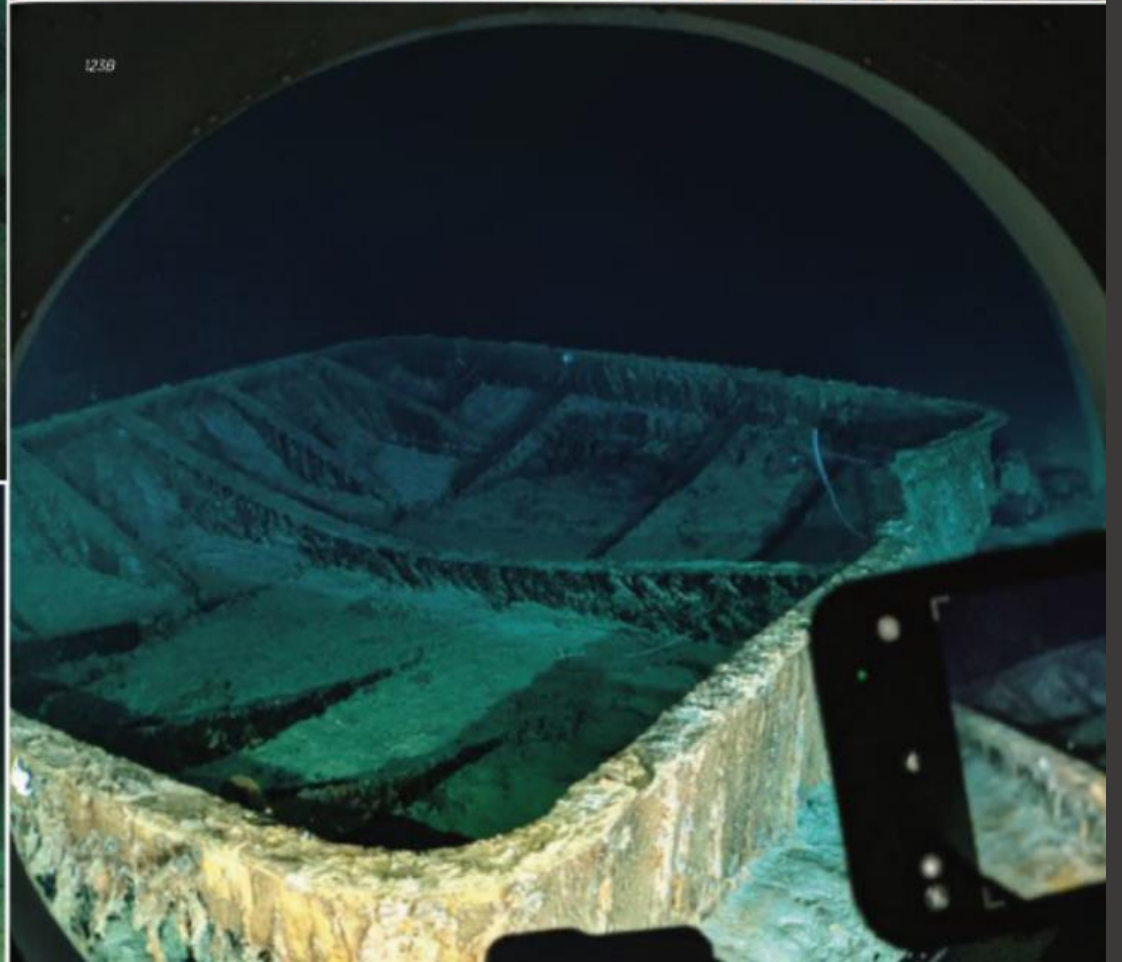
122A Four views of the hatch cover for Cargo Hold No. 1 that is resting upside down in the debris field approximately 60 meters (200 feet) north of the box.



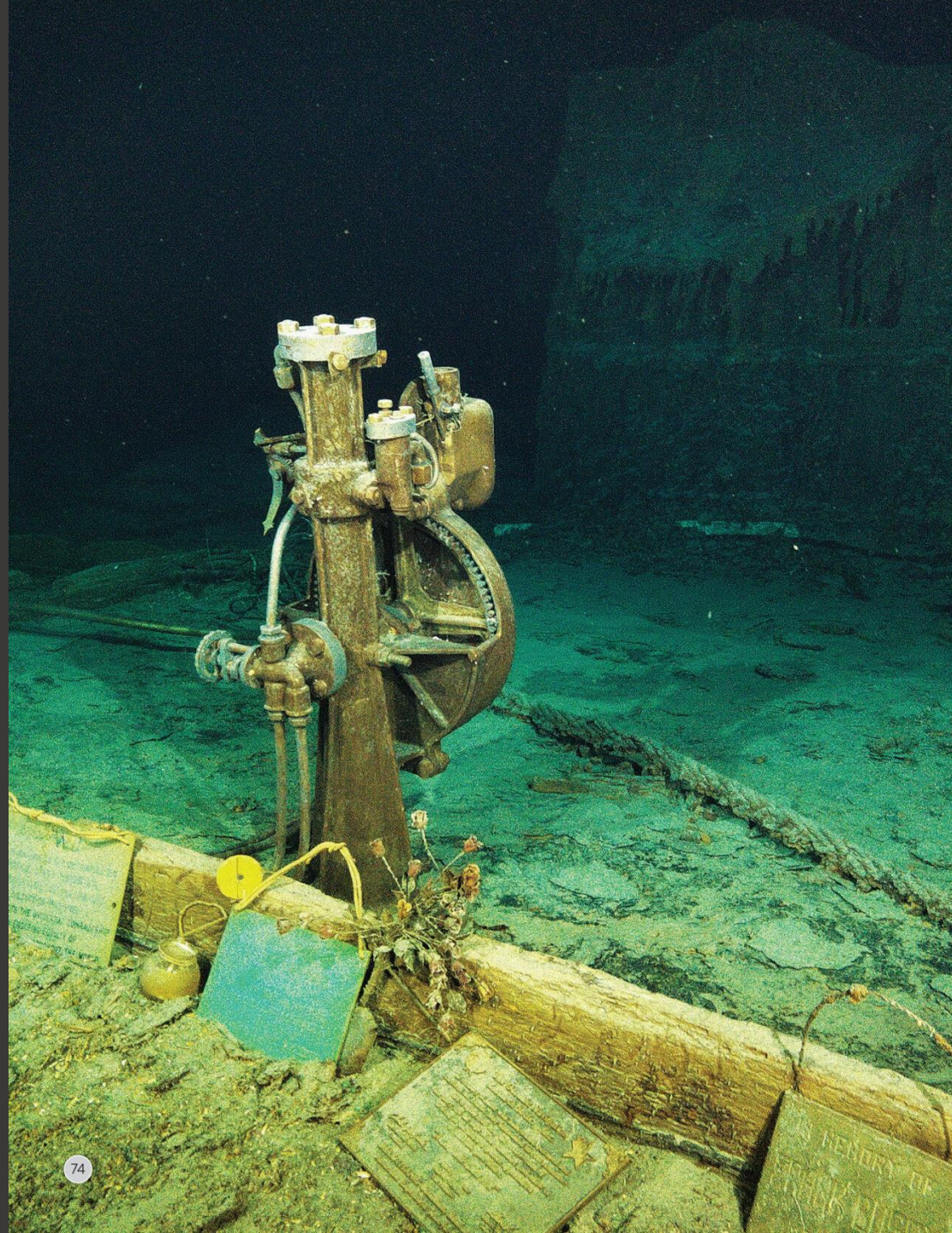
122B



123A

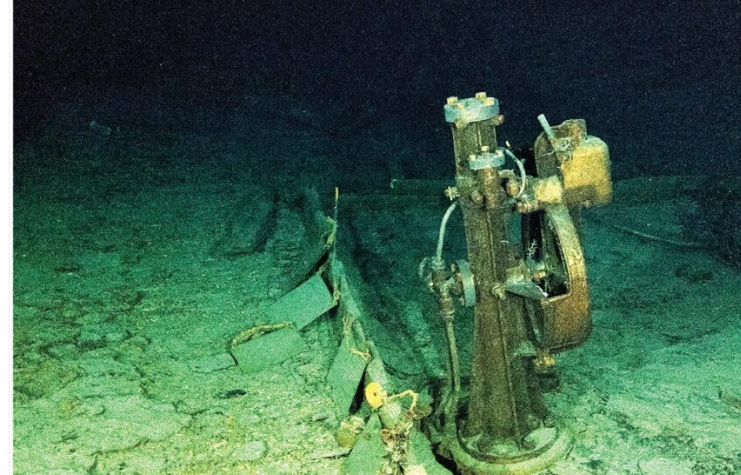


123B



(left)
Bridge telemotor with memorial
plaques left by legacy expeditions.

(right)
Bridge telemotor.
Collapsed forward mast between
cargo holds 1 and 2.
Cargo mast detail with hatchway to
crow's nest.





TITANIC EXPEDITION

COLLECTOR'S EDITION

This Certificate of Authenticity verifies that the Collector's Edition to which it is affixed is one of a limited number of 2021 Titanic Expedition commemorative books that has been certified by OceanGate Expeditions and authenticated with a numbered holographic emblem.

Stockton Rush
Titanic Expedition Leader

P.H. Nargeolet
Titanic Expedition Expert

